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Human Learning System Lab.

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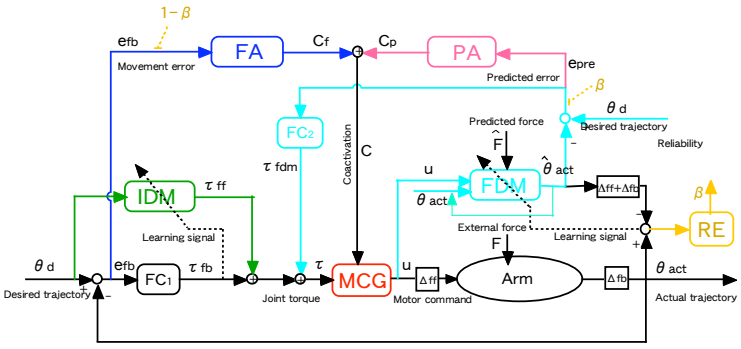
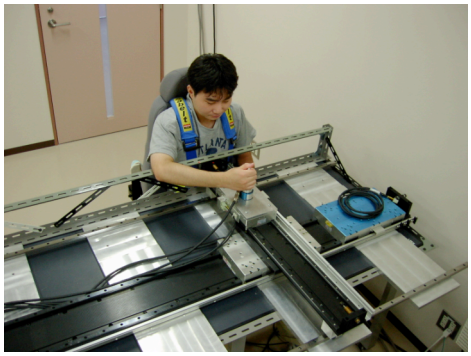
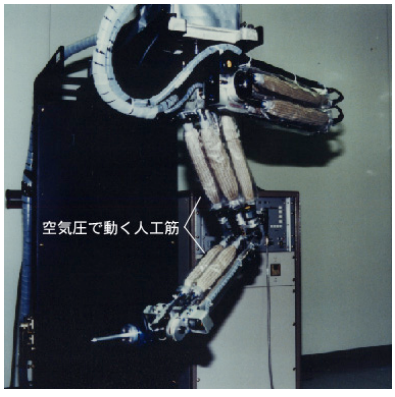
We investigate human visuo-motor learning for motor skill acquisition.



A motor learning model for arm movements.



A measurement system for arm/hand movements.



A bio-mimetic robot manipulator with artificial muscles.

Research

We investigate a visuo-motor learning mechanism for human object manipulation, from a viewpoint of computational neuroscience. Our research is based on three approaches: building computational models, measurement experiments of human arm and/or hand movements and motor learning experiments by using a bio-mimetic robot manipulator with artificial muscles.

★ Computational model: We built motor learning models that trains internal models (forward and inverse models) through learning and acquires motor skills for object manipulation.

★ Measurement experiment: Biological plausibility of motor learning models we built is ascertained by measuring arm-hand movements under various movement conditions.

★ Motor learning experiment: We develop a bio-mimetic robot manipulator with artificial muscles and then we confirm that the robot acquires human-like motor skills through learning experiments.